Porting & Developing: Overview

Category: Porting & Developing Applications

DRAFT

This article is being reviewed for completeness and technical accuracy.

When you are in the process of developing a code or porting a code from another platform, it is important that the code runs correctly and/or reproduces the results from another platform.

These are some steps you can follow when developing or porting a code or when testing a new version of a compiler.

General guidelines:

- Start with small problem sizes and a few time steps/iterations so that you won't have to wait in the queue for a long time just to check whether the program is running correctly. Setting up your PBS script, data files, and getting the program to run correctly can often be done with 10 minute jobs.
- Use PBS' debug queue to get better turn-around time (q=debug).
- While porting, make the fewest changes possible in the code.
- Use the same data sets to compare results on both old and new platforms.
- Don't assume that an absence of error messages means the program is running correctly on either the old or the new platforms.
- Be attentive to porting user data files. Fortran FORM='unformatted' files cannot be assumed to be portable.
- Don't assume that the new platform is wrong and the old platform is right. Both might be wrong.

Other useful information that helps you to port or develop a code on NAS HECC systems can be found in subsequent articles.

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